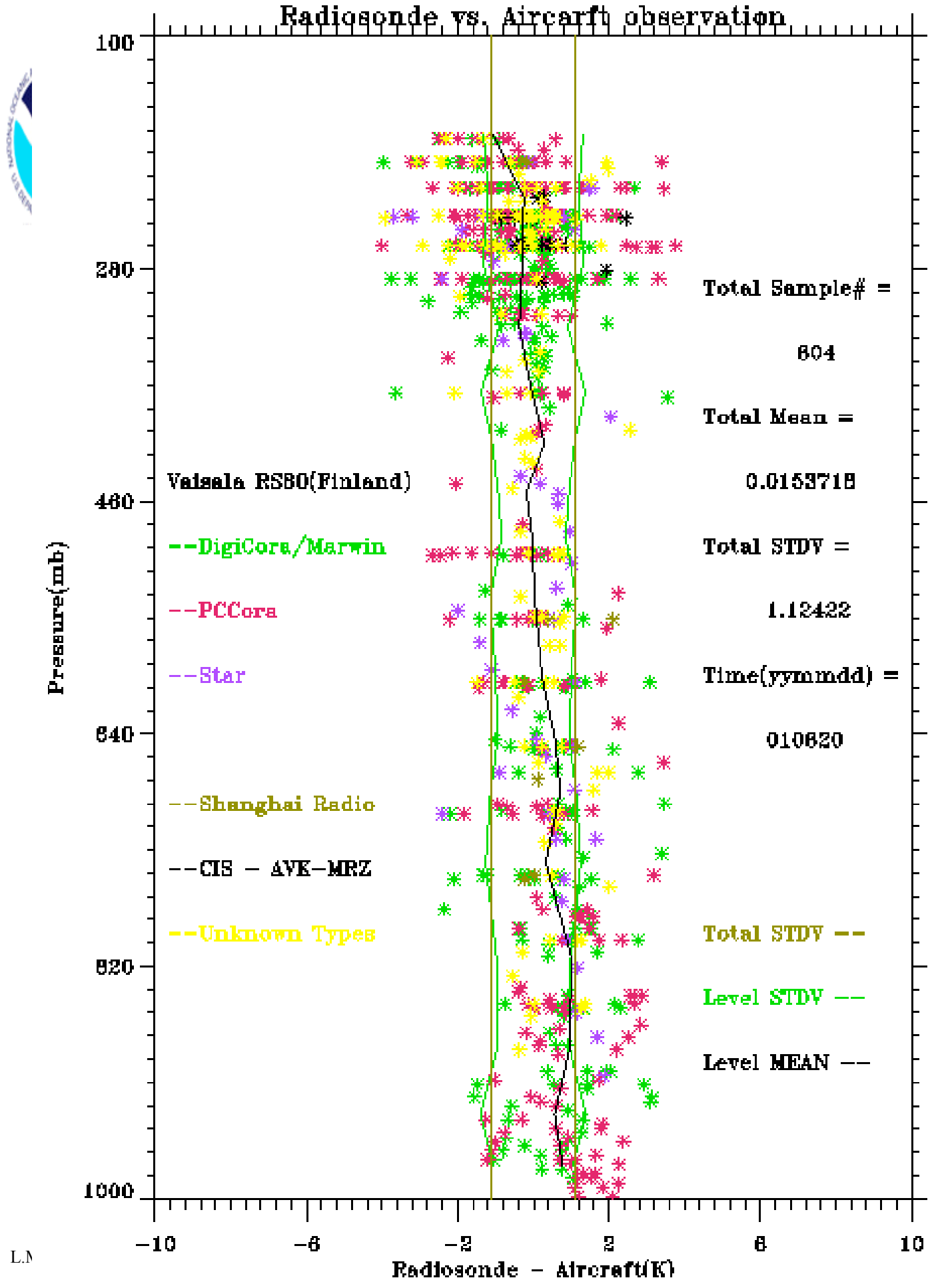
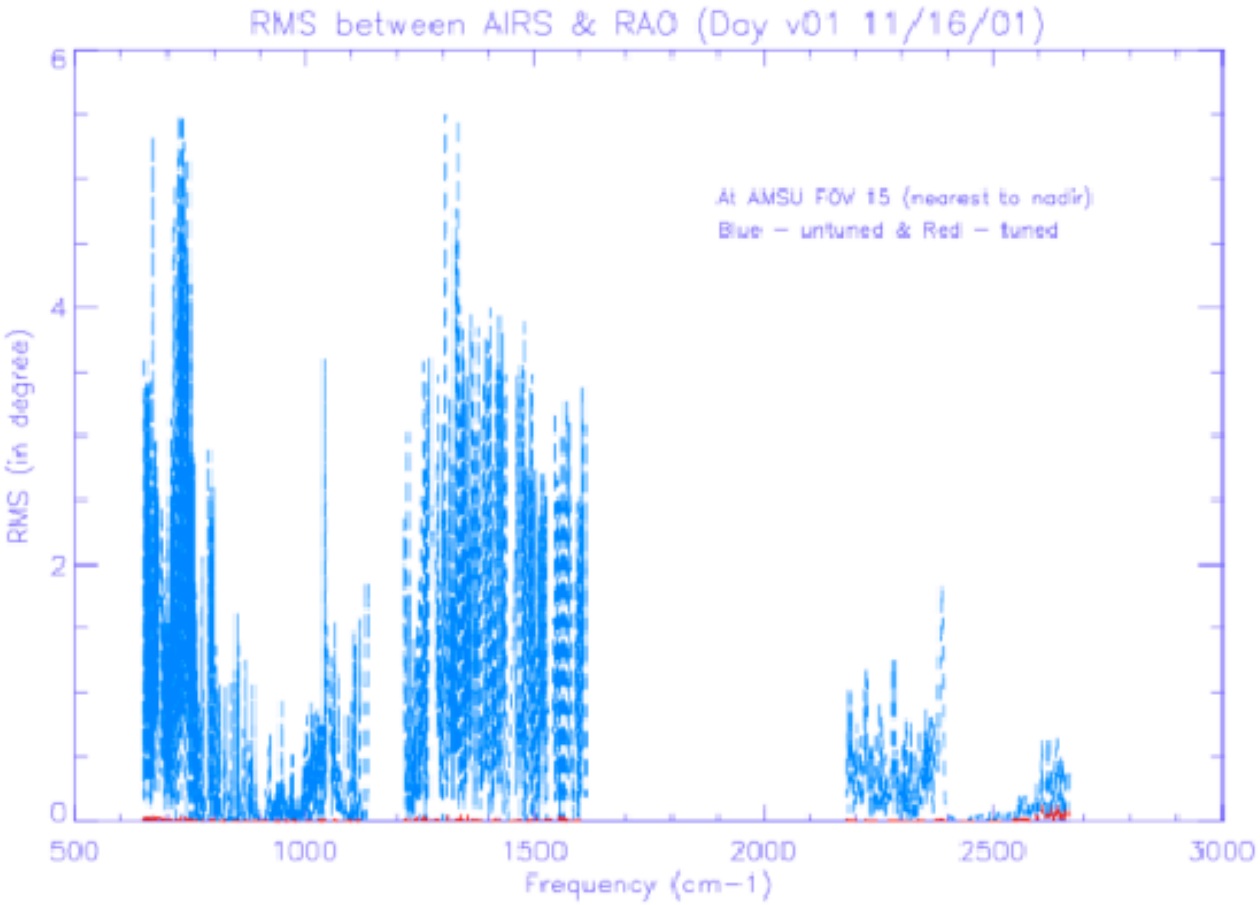
- The next slide shows the comparison of several radiosonde types with the ACARS temperatures. This comes form the match file where radiosondes are matched with ACARS as well as satellite measurements to provide the statistics needed for the validation.


Radiosonde vs. Aircarft observation
100
280
460
640
820
1000
Pressure(mb)
−10
−6
−2
2
6
10
Radiosonde − Aircraft(K)
Vaisala RS80(Finland)
--DigiCora/Marwin
--PCCora
--Star
--Shanghai Radio
--CIS − AVK−MRZ
--Unknown Types
Total Sample# =
604
Total Mean =
0.0153718
Total STDV =
1.12422
Time(yymmdd) =
010620
Total STDV --
Level STDV --
Level MEAN --

The next slide shows a typical examples of a simulated tuning. The blue curve shows the errors before tuning. The red curve sows the errors after tuning. This was done using a simulation designed to produce typical forward calculation errors. One of the features of the simulation is that errors in the two versions cancelled so the instrument error hast to be added to the curve shown for the adjusted vales. However the results show that for errors of the type simulated, the tuning removes the systematic differences.



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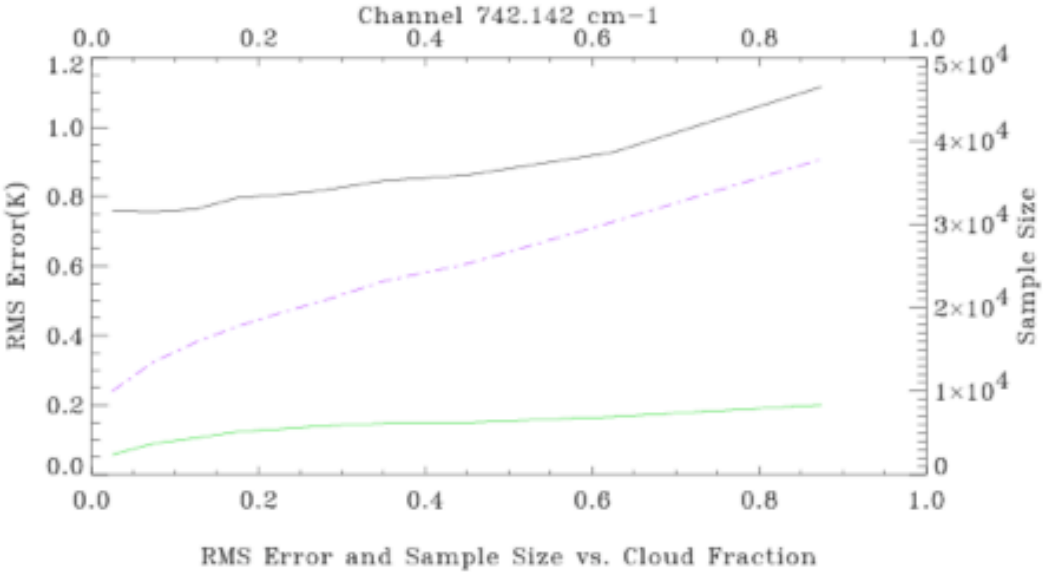
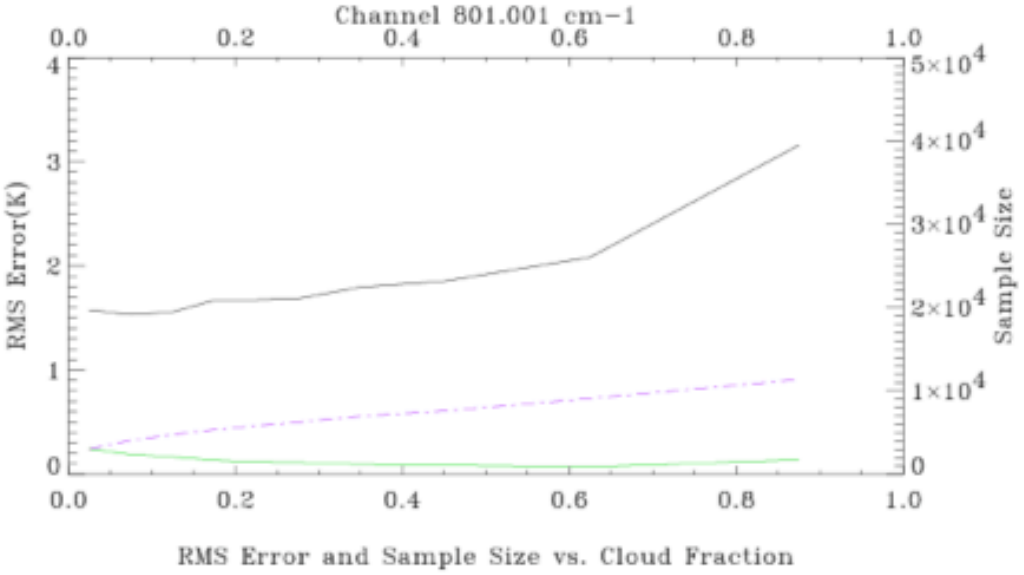
The following curve shows the sensitivity of the tuning algorithm to residual cloud effects. It used the AIRS radiances being simulated routinely by Mitch Goldberg and retrieved using the team retrieval algorithm. The results were compared to radiances calculated using the "truth". Results are shown for two channels, a typical sounding channels and a surface channel. The upper curve shows the error before tuning and the lower shows the error after the tuning algorithm has been applied to the cloud-cleared radiances. The middle curve shows the sample size as a function of cloud amount.


Channel 742.142 cm−1
RMS Error(K)
Sample Size
RMS Error and Sample Size vs. Cloud Fraction


Channel 801.001 cm−1
RMS Error(K)
Sample Size
RMS Error and Sample Size vs. Cloud Fraction